

WHAT IS CLAIMED IS:

- 1 1. A method for mixing wetable powder mixtures comprising:

2 injecting a wetable powder through a hollow inner nozzle of an
3 automatically adjusting annular jet mixer, and

4 pumping mix water into a upstream area provided in the
5 automatically adjusting annular jet mixer between the inner nozzle
6 and a hollow housing within which the inner nozzle axially moves
7 so that the upstream area is pressurized and causes the inner
8 nozzle to move relative to a housing of the mixer until the opposing
9 forces exerted on the inner nozzle by the pressurized upstream
10 area and an pressure regulated area that is pressurized at a
11 regulated pressure are balanced and thereby adjusts the nozzle
12 opening formed jointly by a tapered section of the inner nozzle and
13 a inwardly tapered section of the housing so that high mixing
14 energy is maintained to effectively wet the wetable powder with the
15 supply water as the supply water exits the nozzle opening at all
16 mixing rates.

- 1 2. A method for mixing wetable powder mixtures according to claim 1
2 wherein the injecting a wetable powder is guar gum.
- 1 3. A method for mixing wetable powder mixtures comprising:
- 2 injecting a wetable powder through a hollow inner nozzle of an
3 automatically adjusting annular jet mixer, and
- 4 pumping mix water into a upstream area provided in the
5 automatically adjusting annular jet mixer between the inner nozzle
6 and a hollow housing within which the inner nozzle axially moves,
7 so that the upstream area is pressurized,
- 8 maintaining a regulated pressure on an pressure regulated area
9 provided in the automatically adjusting annular jet mixer thereby
10 causing the inner nozzle to move relative to a housing of the mixer
11 until the opposing forces exerted on the inner nozzle by the
12 pressurized upstream area and the pressurized pressure regulated
13 area are balanced and thereby adjusting the nozzle opening formed
14 jointly by a tapered section of the inner nozzle and a inwardly
15 tapered section of the housing so that high mixing energy is
16 maintained to effectively wet the wetable powder with the supply

17 water as the supply water exits the nozzle opening at all mixing
18 rates.

1 4. A method for mixing wetable powder mixtures according to claim 3
2 wherein the injecting a wetable powder is guar gum.

1 5. A method for mixing wetable powder mixtures comprising:
2 injecting a wetable powder through a hollow inner nozzle of an
3 automatically adjusting annular jet mixer, and

4 pumping mix water into a upstream area provided in the
5 automatically adjusting annular jet mixer between the inner nozzle
6 and a hollow housing within which the inner nozzle axially moves,
7 so that the upstream area is pressurized,

8 maintaining a regulated pressure on a pressure regulated area
9 provided in the automatically adjusting annular jet mixer,

10 allowing the inner nozzle to move relative to a housing of the mixer
11 until the opposing forces exerted on the inner nozzle by the
12 pressurized upstream area and the pressurized pressure regulated

13 area are balanced and thereby adjusting the nozzle opening formed
14 jointly by a tapered section of the inner nozzle and a inwardly
15 tapered section of the housing so that high mixing energy is
16 maintained to effectively wet the wettable powder with the supply
17 water as the supply water exits the nozzle opening at all mixing
18 rates.

1 6. A method for mixing wettable powder mixtures according to claim 5
2 wherein the injecting a wettable powder is guar gum.